



News Release

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U.S. Geological Survey

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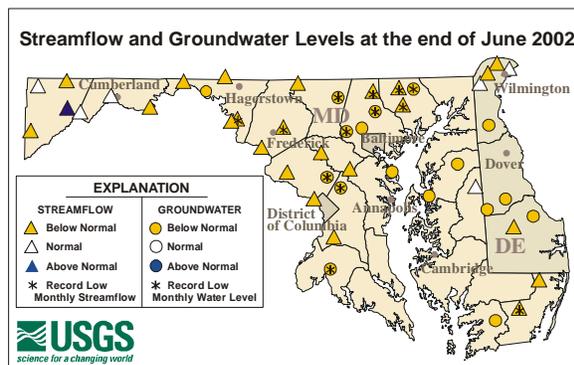
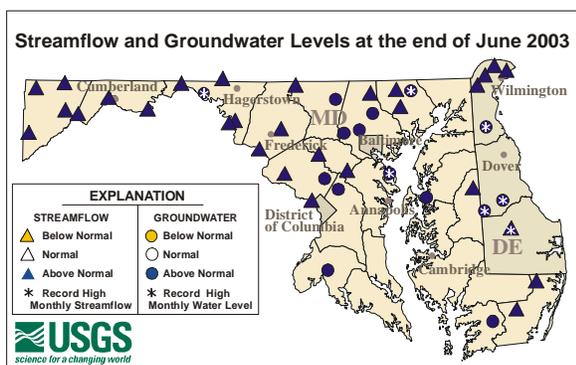
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Record Breaking High Water Levels in Maryland and Delaware

Two months of above normal rainfall have filled our rivers and raised the water table to record monthly high levels in Maryland and Delaware, according to hydrologists at the U.S. Geological Survey (USGS) in Baltimore. The May-June 2003 period was the fourth wettest on record and June was the eleventh coolest on record, according to the National Weather Service. Where does all of this rain go? Rainfall either soaks into the ground, saturating the soil and recharging the aquifers, or if the ground is saturated, the excess water runs off into streams, resulting in high streamflow levels.

June 2003 had the second highest total streamflow into the Chesapeake Bay since record-keeping began in 1937 (66 years). The only higher monthly streamflow was in June of 1972 when Hurricane Agnes engulfed the region. Five rivers set new high monthly mean streamflow levels for June, including the Nanticoke River in Delaware, which had the highest June flow in 55 years. Six wells reached their highest June groundwater level in 40 years. The sites that are not breaking records are at near record high levels.

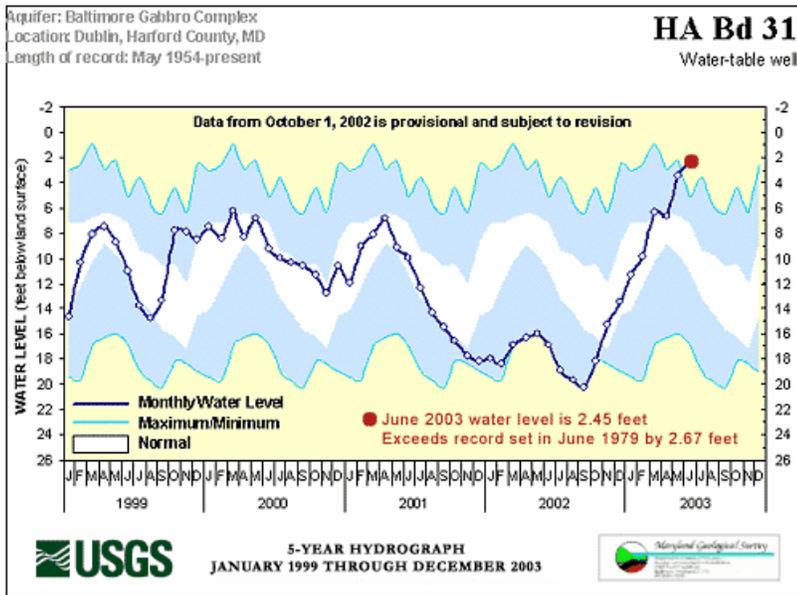
The maps below show how the water resource situation has changed in Maryland and Delaware since last year when the region was experiencing the worst hydrologic drought on record.



For news release and images, go to http://md.water.usgs.gov/publications/press_release/current/.

In June 2003, all wells and streamflow stations used to monitor climatic conditions in the bi-state region were at above normal levels, and six of the wells were at their highest level in 40 years (shown as star symbols on map). In June 2002, most of the wells and streamflow stations were at below normal levels and six wells reached their lowest levels in more than 40 years. The USGS's long-term data show that this number of sites has never before shown such an extreme change in water levels during a short period of time.

In several wells used by the USGS to monitor climatic conditions, record high groundwater levels were set in wells in Anne Arundel, Harford, and Washington Counties in Maryland and Kent and New Castle Counties in Delaware in June 2003. Groundwater levels are expected to drop during the growing season because of increased demand, but the abundant rainfall has raised groundwater levels, recharged the aquifers, and saturated the soil, making it difficult for farmers to work their fields. For 5-year hydrographs of groundwater levels, visit: <http://md.water.usgs.gov/groundwater/>.

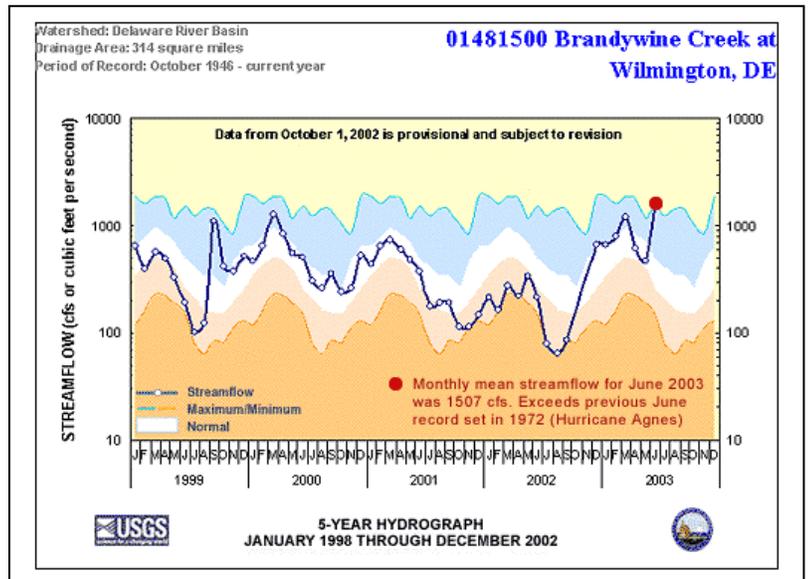


The 5-year hydrograph for a well HA Bd 31 in Harford County, Maryland shows how recharge has occurred and the water level has recovered from record low levels last summer to normal levels in the fall and winter and continued to rise to above normal levels in the spring and summer. The water level has risen nearly 20 feet in less than a year.

Streamflow levels were above normal across Maryland and Delaware and the Nanticoke River in Delaware set a record high at the end of June. Record high monthly mean streamflow levels were set on the Choptank River, Savage River, and Youghiogheny River in Maryland, and Brandywine Creek and Nanticoke River in Delaware.

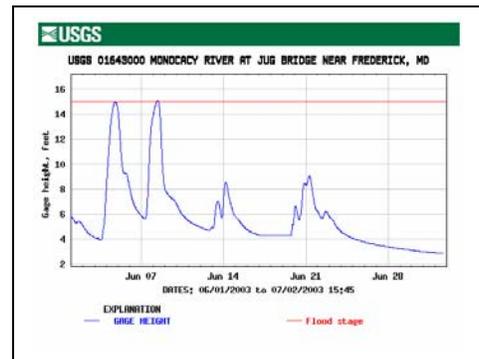
In the 5-year hydrograph for Brandywine Creek, the average streamflow levels (shown as a white band) fluctuate over the year based on the weather and growing season, yet typically decrease during the summer when there is an increased demand on water resources. Streamflow was at record low levels during the summer of 2002 and has risen during the last year to the largest June flow since record-keeping began in 1946.

The average monthly streamflow at the Potomac River near Washington, D.C. was 27.1 bgd (billion gallons per day), or 353 percent above normal (see graphs at <http://md.water.usgs.gov/monthly/poto.html>). This is the highest June streamflow since 1972 when Hurricane Agnes engulfed the region. With groundwater and streamflow levels already high, there is the potential for localized flooding (for information on flooding, see <http://md.water.usgs.gov/faq/index.html#hydrologyoffloods>).



The results of all the rain is that reservoir storage levels in both the Baltimore reservoir system and the Triadelphia and Duckett Reservoirs on the Patuxent River were at full capacity at the end of June. Reservoir data graphs can be viewed at: <http://md.water.usgs.gov/>.

Many streams across Maryland and Delaware set record high daily flows. The Monocacy River reached flood stage (shown as a horizontal line) two times during June. Streamflow data can be monitored on the web at <http://waterdata.usgs.gov/nwis/rt>. Five-year monthly streamflow hydrographs can be viewed on the USGS website at <http://md.water.usgs.gov/surfacewater/streamflow/>



Total flow into the Chesapeake Bay during June averaged 123 bgd (billion gallons per day), which is 197 percent above average and is the second highest flow since record-keeping began in 1937 (see <http://md.water.usgs.gov/monthly/bay1.html>). There were several months with below normal total flow into the Bay during the drought years of 2001 and 2002. In 2003, the total flow has been above average each month. The possible consequences of increased streamflow into the Bay include degraded water-quality conditions in the spring and summer as larger amounts of nutrients and sediment are carried into the Bay. More information about water quality and the Chesapeake Bay can be found at <http://md.water.usgs.gov/monthly/bay.html>.

Streamflow and groundwater levels are used to gauge water conditions and can be used to predict the potential for flooding and drought conditions. These USGS data have been provided to State and local water resource managers and are critical for making appropriate decisions on water regulation. For more information on streamflow and groundwater levels in Maryland and Delaware, see Water Watch at: <http://md.water.usgs.gov/waterwatch>.

The real-time streamflow stations used in this analysis are operated in cooperation with the Maryland and Delaware Geological Surveys, the Maryland State Highway Administration, the U.S. Army Corps of Engineers, the Maryland Department of Natural Resources, the Maryland Department of the Environment, Baltimore County, and other agencies. The observation wells used in this analysis are operated in cooperation with the Maryland and Delaware Geological Surveys. The USGS publishes data for 137 streamflow stations and 379 observation wells across Maryland and Delaware.

The USGS serves the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

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